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(71) Applicant: SONY CORP  
(72) Kumiko TACHIKAWA

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(54) **METHOD OF MONITORING A TRANSMISSION/RECEPTION SIGNAL**

[0015]

[Embodiments] A description is now given of a first embodiment of the present invention with reference to the drawings. Fig. 1 shows a block diagram of a circuit of a digital wireless communication terminal apparatus according to an embodiment of the present invention. Referring to the figure, the transmitter 1, the receiver 2, the voice CODEC 3, the TDMA/TDD control circuit 4, the modulation/demodulation circuit 5, the transmission/reception circuit 6, the antenna 7, the man-machine interface 8 and the key input section 9 are similar to those in the circuit described earlier with reference to Fig. 4. Therefore, detailed descriptions of the circuit will not be given here.

[0016] The digital wireless communication terminal apparatus of the present embodiment is different from that of the conventional art as follows: a connector 10 is added. A signal for transmission and a signal from a base station arrived at the antenna 7 that are to be taken inside a CPU of a controller via the TDMA/TDD control circuit 4 may be taken outside via the connector.

[0017] The signals that are taken out via the connector 10 are as follows. The signals are shown in Fig. 1 with reference numerals (1) to (8).

- (1) a MODEM transmission side enable signal (ME)
- (2) a MODEM reception side enable signal (DE)
- (3) a UW detection signal (UWDET)
- (4) a CRC detection signal (CRCOK)
- (5) a transmission clock to MODEM (MODEMST)
- (6) a transmission signal to MODEM (MODEMSD)
- (7) a reception clock from MODEM (MODEMRT)
- (8) a reception signal from MODEM (MODELRD)

[0018] Fig. 2 shows a diagram that illustrates a system configuration of an analysis device that analyzes a signal taken out via the connector. A digital signal taken inside the analysis device is analyzed in a data processing section. Then, converted data is sent to a CPU. CPU data is sent to an I/O circuit via a system bus, and then to a display terminal device.

[0019] The data processing section, upon receipt of the MODEM transmission side enable signal (ME) arriving via a terminal (1), reads the transmission signal (ST) in synchronization with the transmission clock to MODEM (ST). Upon detection of the UW detection signal (Unique Word Detection signal, UWDET) arriving via a terminal (3) and the CRC detection

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signal (Cyclic Redundancy Check Detection signal, CRCOK) arriving via a terminal (4), the data processing section edits data for the display terminal device and transfers edited data to a buffer.

[0020] Likewise, data processing, upon receipt of the MODEM reception side enable signal (DE) arriving via a terminal (2), reads the reception signal (RD) in synchronization with the reception clock (RT) from MODEM. The data processing then edits the signal and transfers edited signal to the buffer. With this edition, a set of a data length and a message destination are added as a header to a message (of and after a channel type, CI).

[0021] Fig. 3 shows a timing chart of the operation described above. An example of transmission may be described as follows. When the MODEM transmission side enable signal (ME) is received at the terminal (1) as shown in Fig. 3 and represented by (a), and the transmission clock to MODEM (ST) is received at the terminal (5) as shown in Fig. 3 and represented by (c), then the transmission signal to MODEM, which is to be transmitted when the MODEM transmission side enable signal (ME) is active, is received at a terminal (6) as shown in Fig. 3 and represented by (b).

[0022] As shown in Fig. 3 and represented by (d) and (e), the UW detection signal and the CRC detection signal are received, respectively, via the terminal (3) and the terminal (4).

[0023] As mentioned earlier, the method of monitoring a transmission/reception signal according to the present invention retrieves an input/output signal to/from the modulation/demodulation section directly into an individual CPU. Therefore, there is no need of performing the process of storing a transmission/reception message into a memory for the purpose of tracing the message. In addition to this, the monitor device according to the present invention is a system that allows a trace of a message to start or end at any point of time, which may contribute well to efficient use of memory.

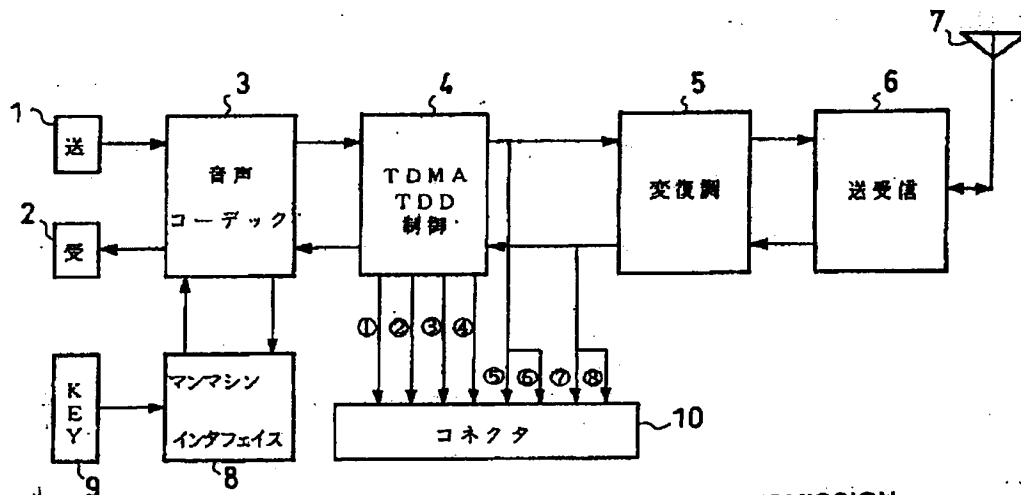
[0024]

[Effects of the Invention] The following are some effects achieved by the method of monitoring a transmission/reception signal according to the present invention.

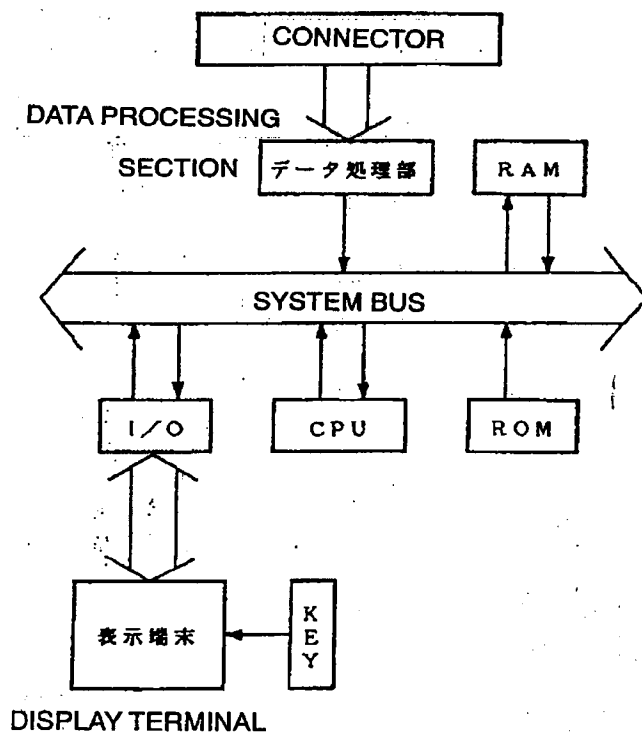
1. The wireless communication terminal apparatus does not need to be internally equipped with an RAM, etc. for tracing data.
2. There is no need to consider tracing in programs for the wireless communication terminal apparatus.
3. It is easy to check or confirm a transmission/reception message at any point of time.

【図1】 Fig. 1

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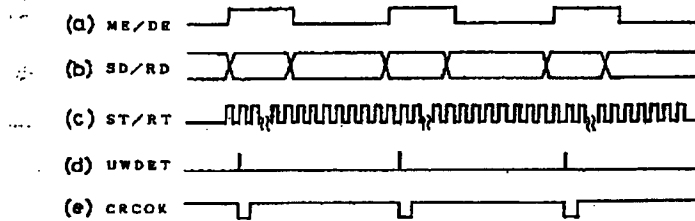
【図2】 Fig. 2



1. TRANSMISSION
2. RECEPTION
3. VOICE CODEC
4. TDMA/TDD CONTROL
5. MODULATION/DEMODULATION
6. TRANSMISSION/RECEPTION
8. MAN-MACHINE INTERFACE
10. CONNECTOR

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【図3】 Fig. 3



【図4】 Fig. 4

